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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,983	08/09/2006	Philip Michael Bagley	ASTB-0054	8859
23377 7590 03/03/2008 WOODCOCK WASHBURN LLP CIRA CENTRE, 12TH FLOOR 2929 ARCH STREET PHILADELPHIA, PA 19104-2891			EXAMINER VENNE, DANIEL V	
			ART UNIT 3617	PAPER NUMBER
			MAIL DATE 03/03/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/568,983

**Applicant(s)**

BAGLEY ET AL.

**Examiner**

DANIEL V. VENNE

**Art Unit**

3617

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 17 and 18 is/are rejected.
- 7) ☒ Claim(s) 14-16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 12042006
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Specification and Claim Objections*

2. The specification and claims contain improper English spellings where British grammar is used. The examiner requests the assistance of applicant to identify and correct all terms and words in the specification and claims that differ from the proper American English version. Examples include the words maneuverability and utilized.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claim 7 recites the limitation "the pressure differential there across" which is not explicitly clear, nor is there adequate antecedent basis for this limitation in the claim.

### *Claim Rejections - 35 USC § 103*

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 1-13, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Batchelder (US 4123858), in view of De Santis (US 5588808). Batchelder discloses all claimed features, with the exception of the pressure multiplier configured as claimed. Batchelder discloses a buoyancy control (ballast) system for an underwater submersible (vehicle) comprising a buoyancy (ballast) chamber [30] having a seawater inlet and outlet, power supply [33, 34] (may be electric) and a hydraulic system for pumping seawater. Batchelder does not disclose a pressure multiplier for increasing pressure applied by the hydraulic pump. De Santis discloses a pressure multiplier for elevating pressure provided by a pump [P] to a liquid. The pump is not specifically disclosed as a hydraulic pump, although hydraulic pumps are well known in the art and any pump used for pressurizing a liquid can be considered a hydraulic pump. Various other water, liquid and pump pressure multipliers are known in the art. Therefore, it would have been obvious to provide a pressure multiplier with the submersible device of Batchelder to create the invention as claimed by applicant. The rationale would have been to provide an known, effective and reliable means to elevate water pressure in a predictable fashion to enhance the speed and effectiveness of pumping water for the purpose of buoyancy control, maneuvering (via water jets) and for high pressure underwater operations. The glass, steel or titanium materials and sphere shape, the undersea depth pressures and the capacity recited for the buoyancy chamber, are all considered design choices which carry little significant patentable weight. Using flow of seawater from an inlet to generate electrical power for various purposes, including to recharge a power supply is known in the art and would be

considered an obvious enhancement to Batchelder in view of De Santis; utilizing seawater flow from an inlet leading into a ballast tank or buoyancy chamber for descending a submersible vehicle is known in the art, and utilizing this flow of seawater to turn a turbine to generate electricity during the submersible vehicle descent would be considered an obvious use of a known means in a known manner to provide the predictable result of providing electrical power. Electrical control systems for distribution of current to a battery are known in the art. Dynamically adjusting flow of water (using valves or other similar means) to create a pressure differential is also known in the art.

***Allowable Subject Matter***

8. Claims 14-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

9. The prior art recited and not relied upon is considered pertinent to applicant's disclosure. Zabtciglu (US 6729857 B2) discloses a water pressure multiplier. Kux (US 2867088) discloses a pressure multiplier. Leonard et al. (US 2003/0075096 A1) discloses a buoyancy control system with buoyancy chamber and electric power supply. Ness (US 6371041 B1) discloses a submersible vehicle with buoyancy control.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel V. Venne whose telephone number is (571) 272-7947. The examiner can normally be reached between 7:30AM - 4:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samuel J. Morano can be reached on (571) 272-6684. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DVV

/Lars A Olson/  
Primary Examiner, Art Unit 3617